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The communications network is comprised of several components, each of which are selected by the design engineer and which are represented in the display. Errors in the selection of certain selected components for the communications network are identified by their attributes or frequency characteristics as well as by their interconnection compatibility for a particular design. The effects of changes in frequency on component performance are modeled and the results are displayed to the design engineer. A bill of materials is automatically checked for faults and generated for the design system and provided to the design engineer. For ease of design, the design engineer can cluster several different preferred components into component kits, and then select these component kits for use in the design or deployment process.